

**GUIDE FOR  
ENVIRONMENTAL JUSTICE ANALYSIS  
WITH THE ENVIRONMENTAL  
IMPACT ANALYSIS PROCESS (EIAP)**

**Department of the Air Force**

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# INTRODUCTION

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[Executive Order \(EO\) 12898](#), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued on February 11, 1994. The EO requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.

A Presidential memorandum that accompanied EO 12898 specified that federal agencies “shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the National Environmental Policy Act of 1969 (NEPA), 42 U.S. Code Section 4321 et seq.” The memorandum further stated that federal agencies “shall provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of meetings, crucial documents, and notices.”

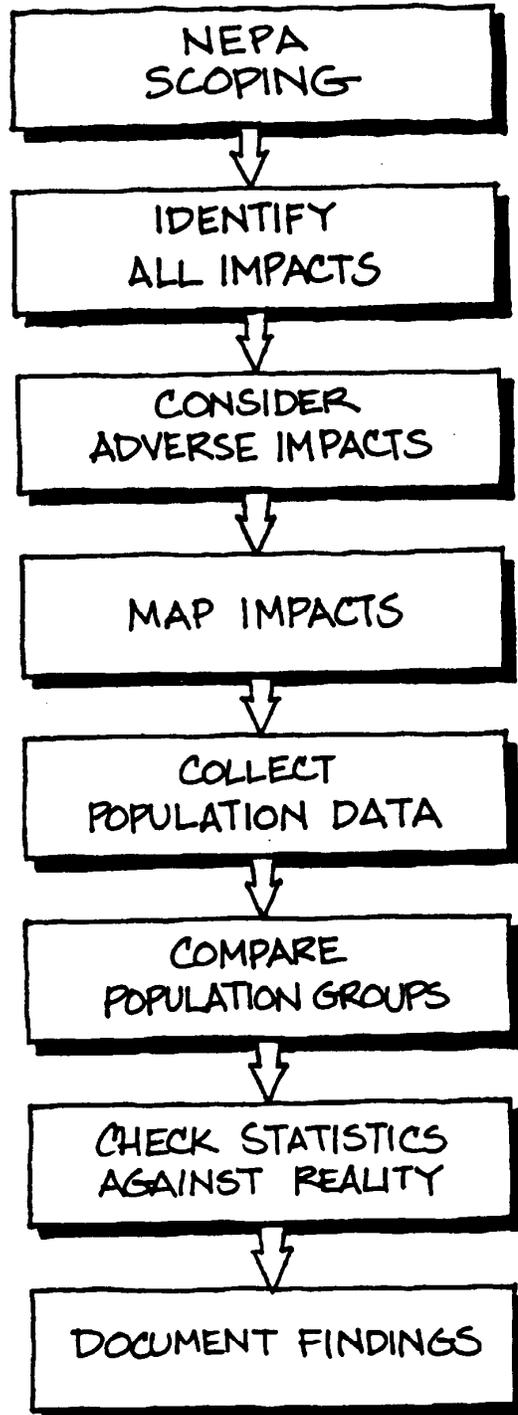
This guide provides one general approach for conducting environmental justice analysis in conjunction with the environmental impact analysis in accordance with NEPA through the regulations promulgated by the President’s Council on Environmental Quality Regulation (40 Code of Federal Regulations [CFR] 1500-1508), and through Air Force Instruction (AFI) 32-7061, The Environmental Impact Analysis Process (EIAP). The approach presented in this guide can be employed in the development of environmental impact statements (EISs) and environmental assessments (EAs) for complex proposed actions. The concepts and practice of environmental justice are relatively new, including their use in conjunction with NEPA. This guide should be viewed as being subject to modification and adaptation, depending upon the varying circumstances in which environmental justice questions will arise.

[Figure I-1](#) depicts the major concepts involved in this approach to environmental justice as carried out in conjunction with NEPA. The step-by-step process used in performing this analysis is described in more detail in [Figure I-2](#). Terms and concepts introduced in [Figure I-2](#) are defined in [Appendix A](#). The remainder of this document demonstrates this approach, step by step, with descriptions of WHAT should be done for each step, WHY it is done, and HOW it can be accomplished. Sample language for use in environmental documents is also provided.

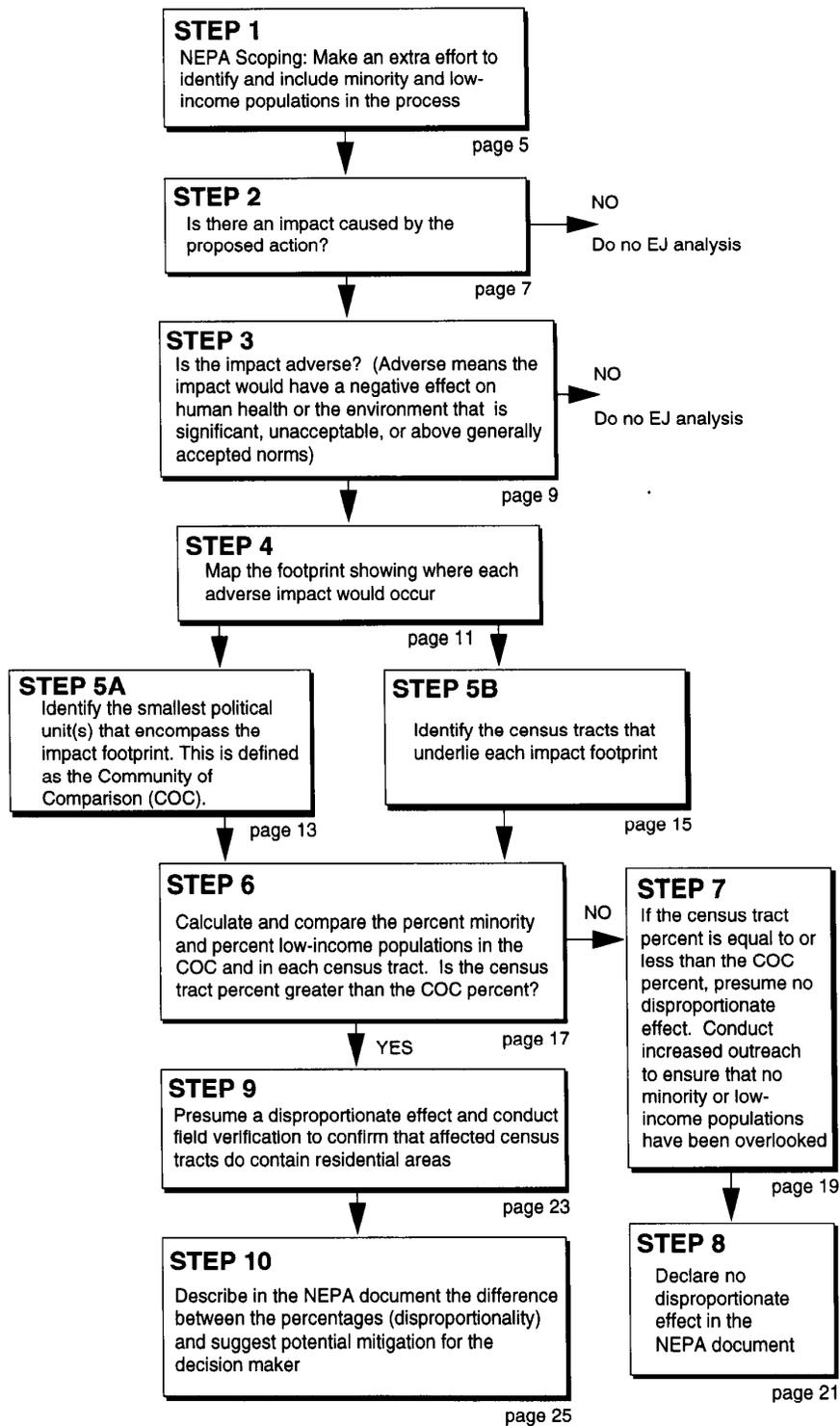
**Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994 ([Appendix B](#))**

- ◆ Requires federal agencies to consider disproportionately high and adverse environmental effects on minority and low-income populations
- ◆ Requires that minority and low-income populations be given access to information and opportunities to provide input to decision-making on federal actions
- ◆ Establishes the interagency Federal Working Group on Environmental Justice.

FIGURE I-1. ENVIRONMENTAL JUSTICE CONCEPT



**Figure I-2. ENVIRONMENTAL JUSTICE FLOWCHART**



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## FLOWCHART STEP 1: NEPA SCOPING

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1

NEPA Scoping: Make an extra effort to identify and include minority and low-income populations in the process.

### What:

Scoping is a part of the NEPA process. The scoping process should be expanded to ensure that minority and low-income populations are invited to participate, that opportunities are provided for them to become informed, and to voice their concerns.

### Why:

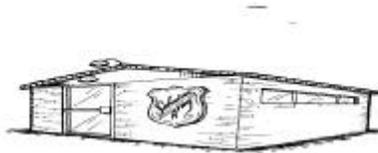
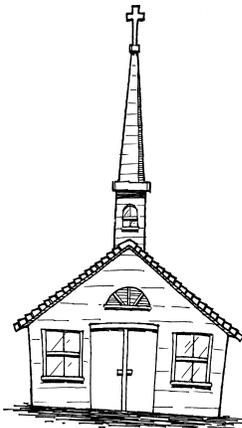
EO 12898 specifies that the public should have access to information on, and opportunities for input into, the environmental justice process. This will help identify issues of concern to minority and low-income communities, and help identify where those communities are located, so that environmental impacts can be accurately assessed and analyzed.

### How:

Public outreach should be conducted during the beginning of the planning stage of a project (i.e., during scoping for an NEPA analysis) and carried throughout the process. Public outreach and advertising of the process should be directed specifically toward minority and low-income groups, as well as toward the general public, to encourage these groups to identify themselves and their concerns. This effort should include coordination with federal, state, local, and tribal governments and agencies; local groups; community leaders; and social agencies in the local community to identify target groups and the channels (including non-English language, where necessary) that would reach these groups.

The above groups may be identified in several ways. Initial outreach can be conducted by contacting organizations such as:

- ◆ National Association for the Advancement of Colored People (NAACP)
- ◆ Restoration Advisory Board
- ◆ Salvation Army



- ◆ Churches, food banks, community centers, and realtors
- ◆ Legal aid providers
- ◆ Rural cooperatives
- ◆ Local government offices, such as housing authority, economic development and planning departments, public health and social services agencies, and police departments
- ◆ Base Restoration Advisory Board (RAB) members

- ◆ For a proposed action involving disposal of Air Force property, groups requesting property as part of the disposal and reuse process, such as homeless or low-income advocacy groups or Native Americans, should be contacted during the initial phase of the outreach effort.

These agencies can be found in the local telephone directory (e.g., yellow pages), the People of Color Environmental Groups 1994-1995 Directory (published by the Environmental Justice Resource Center), or identified during the scoping process as part of NEPA. Other communication channels include newspaper ads, radio announcements, newsletters, flyers, and posters.



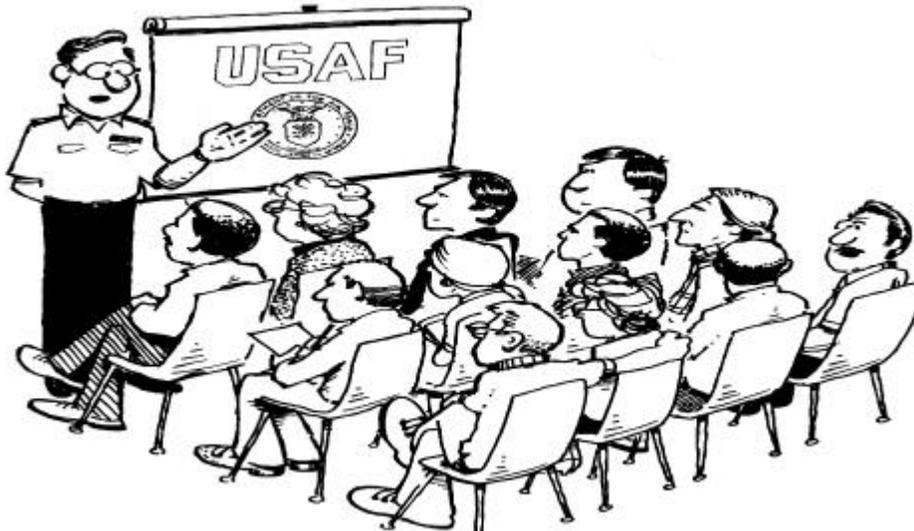
On initial contact, notify the contact that they have been identified as part of the Air Force outreach effort under EO 12898, and that issues and concerns raised by these groups will be considered in the planning process. Request the following information:

- ◆ Confirm that the organization does serve or represent a minority or low-income group
- ◆ Make sure the agency can provide the target group access to project information materials (e.g., public centers, assistance desks)
- ◆ Confirm the agency's mailing address
- ◆ Ask if they can provide additional minority or low-income group contacts.



All minority and low-income groups thus identified should be specifically notified of the availability of any information requesting input into the planning process and any subsequent environmental justice documents available for review. An example of a public outreach notification letter is provided in [Appendix C](#). Informational materials provided to the public during scoping should include a description of the project, the project locations, the types of environmental impacts that may be anticipated, and the areas in which these impacts could occur (if known). Information should be presented in clear, nontechnical language. It may be advisable to schedule separate, smaller scoping meetings at community locations

where minority and low-income populations would feel more comfortable participating, such as a church, school, or community center.



## FLOWCHART STEP 2: IS THERE AN IMPACT?

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2

Is there an impact caused by the proposed action?

### What:

Environmental justice analysis is necessary only if the environmental impact analysis indicates that there may be impacts; if there would be no environmental impacts on human populations, then there would be no disproportionate environmental impacts on minority or low-income populations.

### Why:

The Presidential memorandum specifies that the environmental justice analysis should be accomplished as part of the NEPA analysis; if there is no environmental impact, there is no need for an environmental justice analysis.

### How:

It is advisable to document why it is considered that there would not be any impacts to human health or the environment. Air Force Form 813 should be completed for the project (see AFI 32-7061), or an EA and Finding of No Significant Impact (FONSI) may be prepared.

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## FLOWCHART STEP 3: IS THE IMPACT ADVERSE?

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3

Is the impact adverse?  
(Adverse means the impact would have a negative effect on human health or the environment that is significant, unacceptable, or above generally accepted norms.)

### What:

Environmental justice analysis need be applied only to adverse environmental impacts. Based on preliminary guidance provided by the Federal Interagency Working Group on Environmental Justice, adverse may be defined as “having a deleterious effect on human health or the environment that is significant, unacceptable, or above generally accepted norms.” Adverse human health effects include bodily impairment, infirmity, illness, or death. Adverse environmental effects may include ecological, cultural, human health, economic, or social impacts when interrelated to impacts on the natural or physical environment. When regulatory levels have not been established, it may be appropriate to use the current or past levels of activity as a benchmark. In the NEPA analysis, the No-Action Alternative represents the status quo; the analysis will indicate whether the proposed action (or alternative[s]) would have a more negative effect than the No-Action Alternative. In most cases, an environmental justice analysis would not be required for an EA that results in a non-mitigated FONSI.

### Why:

If there would be no adverse impact, then there would not be any disproportionately high and adverse impact to minority or low-income populations. Notice on how this may be described in an environmental document is shown in the example on page 10.

### How:

The environmental impact analysis process should be implemented in accordance with 40 Code of Federal Regulations (CFR) 1500-1508 and AFI 32-7061 to identify the potential for adverse impacts. The scoping process (described in [Flowchart Step 1](#)) is used to identify the kinds of adverse impacts that may result from an action, and to assess the significance of the potential impacts. Certain categories of actions may be categorically excluded from the need for environmental impact analysis (40 CFR 1508.4; AFI 32-7061, Section 3.2). Other types of actions require environmental impact analysis (40 CFR 1501.4; AFI 32-7061, Section 3.5), based on the potential for significant (40 CFR 1508.27) impacts to human health or the environment or substantial public controversy.

It is advisable to document why there would be no adverse environmental impact, similar to preparation of a Categorical Exclusion (CATEX) or an EA.

Sample language documenting why there would be no adverse environmental impacts associated with a proposed action is presented below.

**SAMPLE LANGUAGE**

*No environmental impacts are anticipated as a result of the proposed action, construction of a new storage facility. The project would result in ground disturbance of less than 1 acre of land, located entirely within the boundaries of Model AFB. The ground disturbance is small because the site is served by a paved road and utility mains. Surveys have documented that there are no wetlands, threatened or endangered species, or cultural resources present in the project area (references). The site of the new construction is more than 0.5 mile from administrative areas and more than 2 miles from the nearest residential area; therefore, noise and air emissions (primarily PM<sub>10</sub> as fugitive dust) would not impact any residents or workers, and these effects would be short-term and temporary. Standard construction practices would be implemented to minimize dust. No hazardous substances would be stored at or transported to the site. There are no surface water bodies near the site. Because there would be no adverse environmental impacts, an environmental justice analysis is not required.*

## FLOWCHART STEP 4: MAP THE IMPACT FOOTPRINT(S)

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4

Map the “footprint” showing where each adverse impact would occur.

### What:

Identify and map the area(s) in which adverse impacts could occur for each resource addressed in the NEPA analysis.

### Why:

The area(s) of impact (impact footprint) will typically vary for each resource affected. Mapping all areas where adverse environmental impacts may occur will define the areas where the environmental justice analysis will be focused, to determine whether minority or low-income communities living in those affected areas may be disproportionately affected.

### How:

The impact footprint is the geographic area that would be adversely affected by a proposed project. It is determined for each resource using the results of the environmental analysis. All potential environmental impacts should be mapped: direct effects on resources; indirect effects caused by, for example, increased population and employment; and cumulative effects of this and other past, present, and reasonably foreseeable future actions.

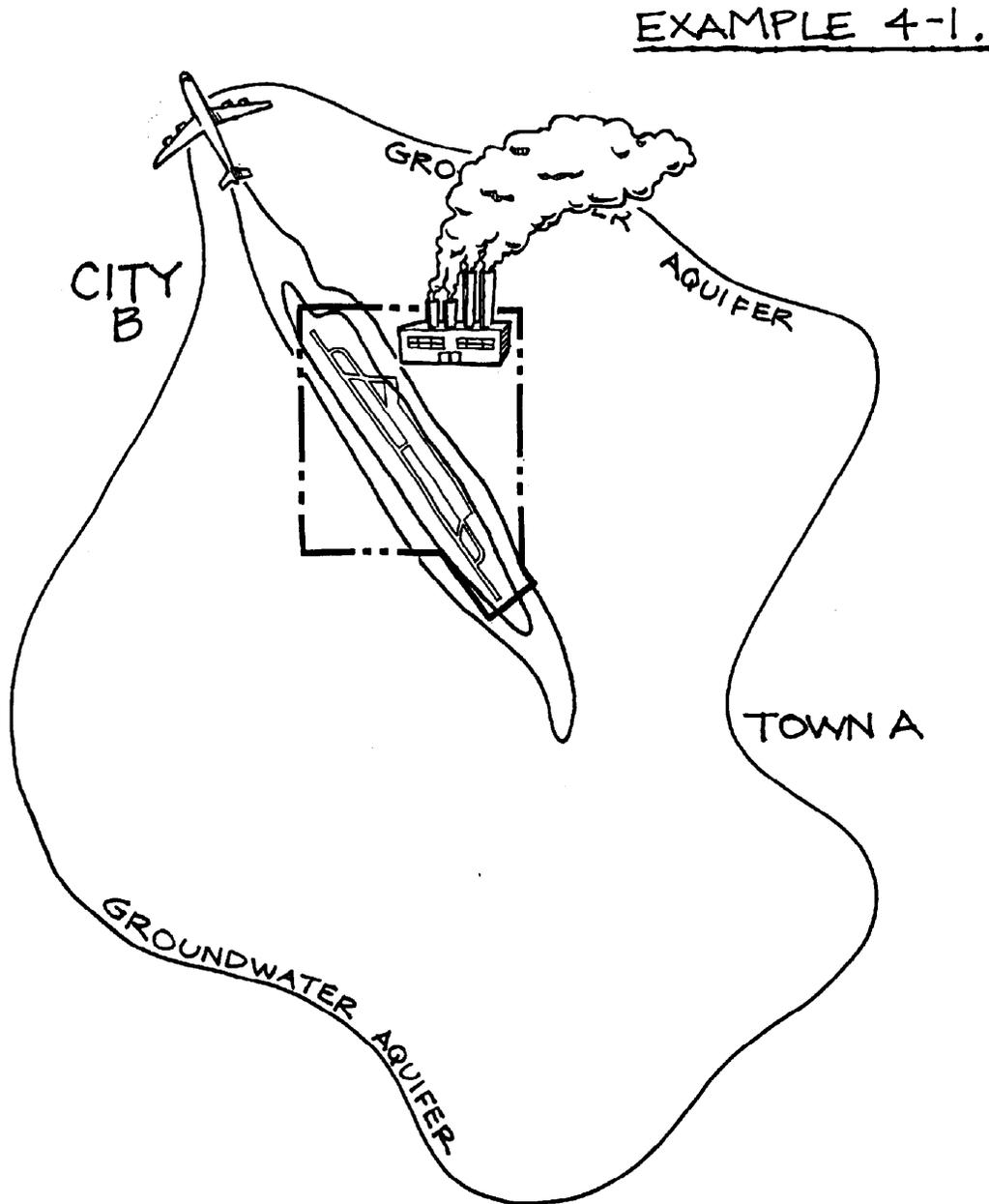
To identify the impact footprint for a resource, determine if a disproportionately high and adverse impact would be caused by the proposed project. For example, for a proposed project that would generate noise, an adverse noise impact may be defined as exposure above a certain decibel level. Those areas that would be subject to adverse noise levels from the proposed project, but that would not be exposed to such noise levels under the No-Action Alternative, would be considered to be adversely affected and would constitute the impact footprint.

Examples of potential environmental impacts that could result in environmental justice impacts are as follows:

- ◆ Impacts to surface water quality or flow in an area used for recreational uses
- ◆ Impacts to groundwater quality or levels in an area where groundwater is used by residents
- ◆ Local air quality impacts such as plumes from a point source or traffic-related levels adjacent to a highway or at intersections
- ◆ Impacts to fish and wildlife where these resources are consumed for subsistence
- ◆ Impacts to cultural or religious sites
- ◆ Noise impacts caused by increased traffic or aircraft noise
- ◆ Changes in land use
- ◆ Transportation and utility effects that could result in environmental impacts
- ◆ Other possible environmental impacts.

Air pollutant emissions or other impacts that would equally affect everyone residing in the region may not need to be considered if the impacts would not disproportionately affect any one group or locality.

[Example 4-1](#) depicts generic impact footprints for noise (aircraft noise contours), air quality (emissions from a stationary source), and a groundwater aquifer.



## FLOWCHART STEP 5A: IDENTIFY THE COMMUNITY OF COMPARISON

### 5A

Identify the smallest political unit(s) that encompass the impact footprint.

### What:

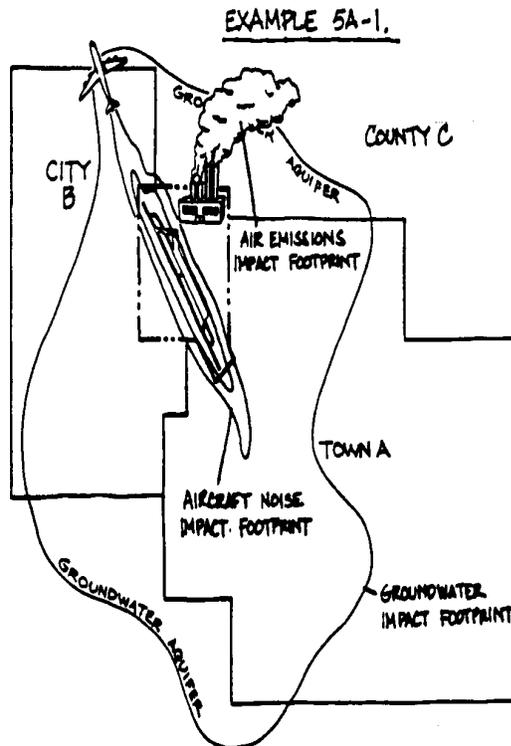
The demographic profile of the region in which the project area is located provides the context within which the environmental justice analysis will be conducted.

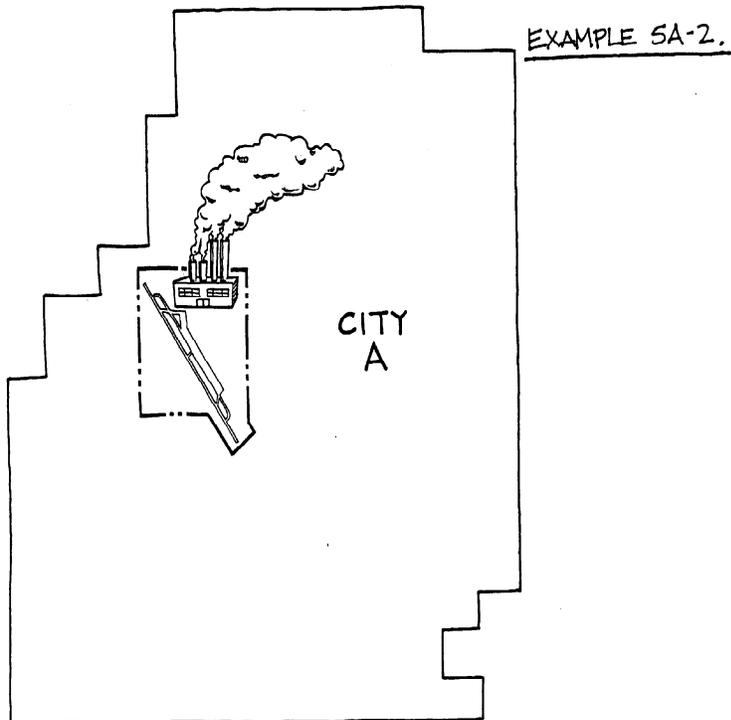
### Why:

In order to understand whether or not environmental impacts would disproportionately affect minority or low-income populations, it is necessary first to establish an appropriate basis for comparison. This basis is the community of comparison (COC). Geopolitical units are used because (1) typically, that is how census data (which provide the demographic profile) are collected; and (2) that is how concerned constituencies are represented, and the avenues via which their concerns can best be brought to bear influence on the federal action.

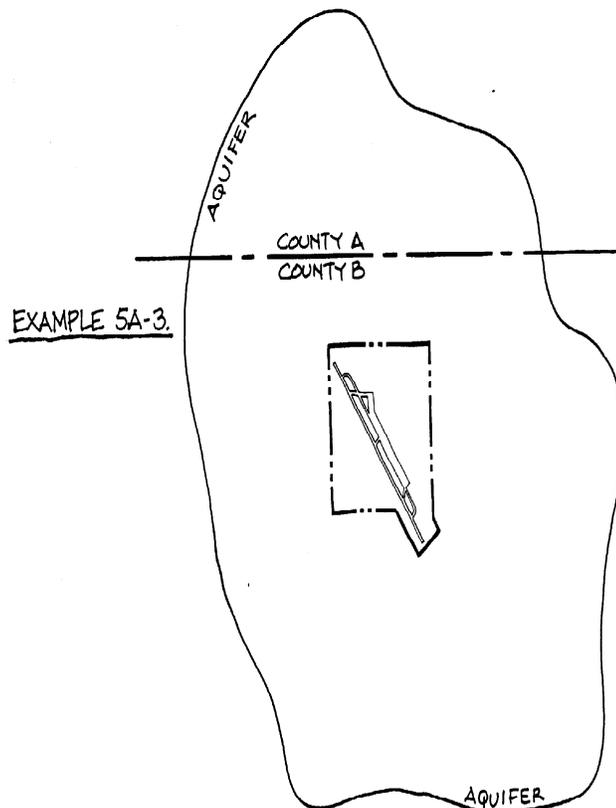
**How:** The COC is defined as the smallest governmental or geopolitical unit(s) that encompasses the impact footprint for each resource. Types of governmental units that may be identified as the COC include cities, towns, townships, counties (or portions thereof), parishes, tribal governments, or resource-specific agencies, such as air quality control boards (for the air quality resource footprint).

In [Example 5A-1](#), the impact footprints all overlie a portion of a county, which also encompasses the cities that are touched by the footprints; therefore, the COC would be the county.





In [Example 5A-2](#), the impact footprint is contained within the boundaries of City A, which would be identified as the COC for that resource.



In [Example 5A-3](#), the impact footprint overlies portions of two counties; the COC would consist of both counties.

## FLOWCHART STEP 5B: IDENTIFY THE AFFECTED CENSUS TRACTS

### 5B

Identify the census tracts that underlie each impact footprint.

### What:

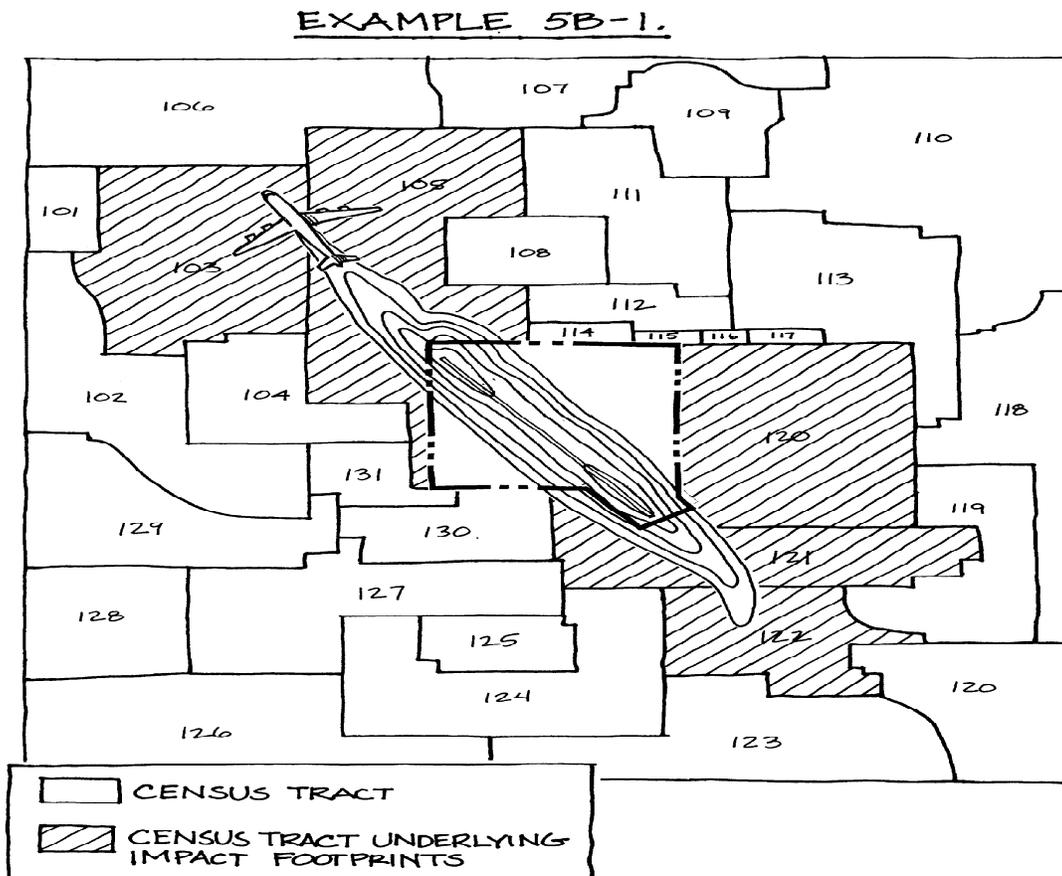
Identify any census tracts (or equivalent census areas) that lie within or partially within the impact footprint.

### Why:

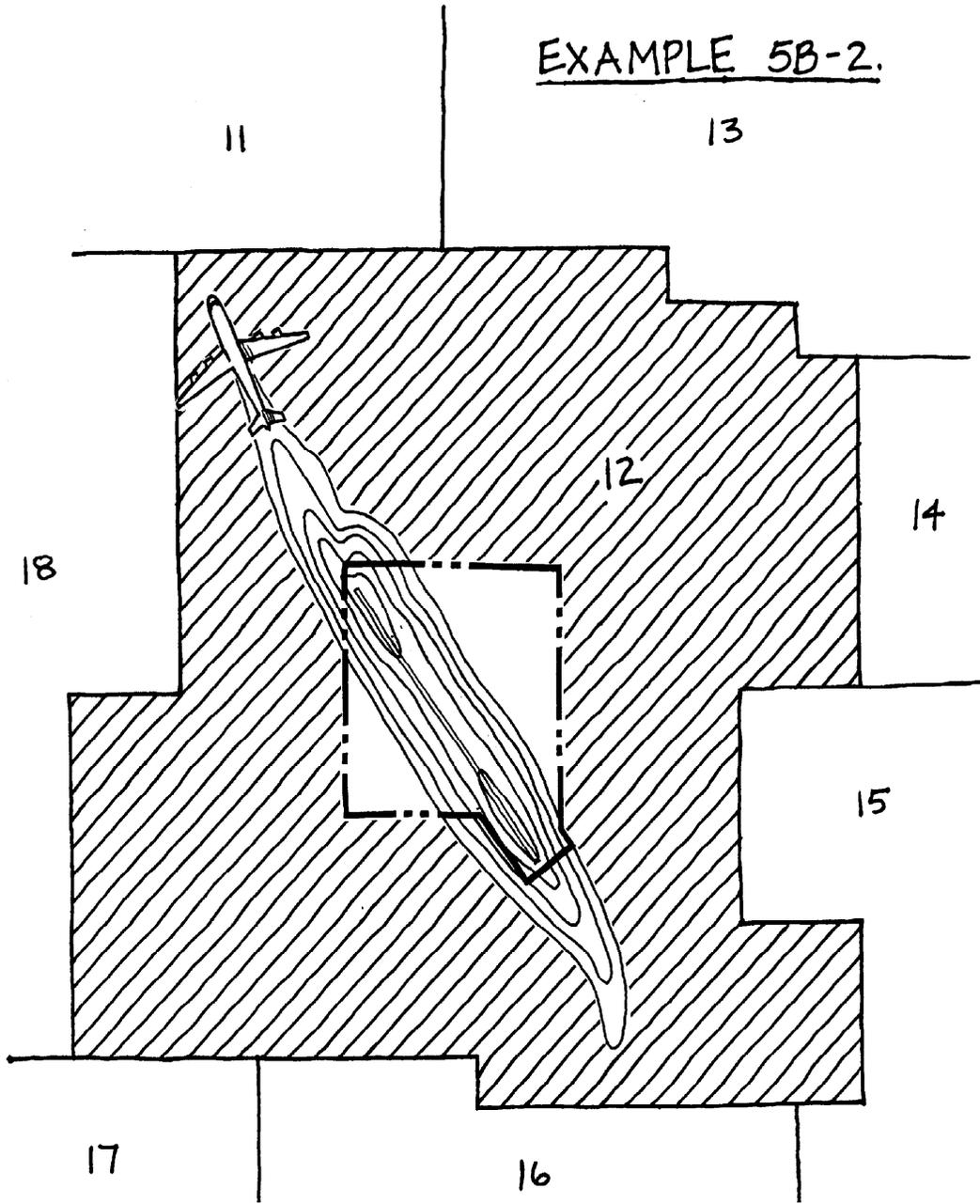
Census data describe the race and income characteristics of the residents within defined census subdivisions. Census data for metropolitan and other densely populated urban areas are typically grouped by divisions called census tracts. In many nonmetropolitan areas, particularly more rural areas, census data may be grouped by divisions called Block Numbering Areas (BNAs). Similar census data are provided for census tracts and for BNAs. This information can help locate minority and low-income populations who live in the impacted areas.

### How:

Overlay the map of the impact footprint(s) on a map of census tracts and identify the tracts that lie within or partially within the footprint(s). In [Example 5B-1](#), the census tracts that are touched by the impact footprint are shaded.



In [Example 5B-2](#), the entire impact footprint is contained within a single large census tract, which is the only affected census tract.



## FLOWCHART STEP 6: CALCULATE AND COMPARE DEMOGRAPHICS

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**6**

Calculate and compare the percent minority and per-cent low-income populations in the COC and in each affected census tract. Is the census tract percent greater than the COC percent?

### What:

Compare the percent minority and low-income populations in the affected census tracts to the percent minority and low-income populations in the overall COC. Minority and low-income populations are two different groups, and should be analyzed separately.

### Why:

Comparison with the census data for the overall COC provides an indication of disproportionality of minority and low-income populations within census areas. The Census of Population and Housing provides a readily accessible description of the percentage of minority and low-income residents within each census area.

### How:

Census data should be obtained for the COC and for the affected census tracts (those census tracts that fall within a resource impact footprint). The percentages of minority and low-income populations within each affected census tract should be compared to the corresponding percentage for the COC to determine whether the affected tract contains a disproportionately high percentage of minority or low-income residents. Note that an affected tract that has a minority or low-income percentage of 50 percent or more is presumed to be “disproportionately high,” even if the encompassing COC exhibits a higher minority or low-income percentage than the affected tract. This would alert the decision-maker to the fact that the affected minority or low-income population is high so that he/she may address the matter in the record of decision.

Minority populations and low-income populations are separate groups, and the comparison should be made for each percentage. A census tract may have a disproportionately high minority population, but its low-income population may be below the average COC percentage for low-income residents. Census data should be presented in tabular format, like that shown in [Table 6-1](#).

In the example ([Table 6-1](#)), minority and low-income percentages were calculated, and are shown, only for the affected census tracts, which are those that lie under the impact footprint. The table shows that Census Tract 1003 has both minority and low-income population percentages that are greater than the corresponding percentages for sample county, the COC. Census Tract 1005 has a greater minority percentage than the COC, but a lower low-income percentage, whereas Census Tracts 1004 and 1009 have minority percentages that are less than that of the COC, but their low-income percentages are greater.

A full explanation for calculating and comparing census data is presented in [Appendix D](#). Part One: Calculating and Comparing Demographic Data, describes the technical methodology used in this guide. Part Two: Other Sources of Comparing Demographic Data, identifies other possible sources of securing data to do environmental justice analysis, especially for EIAP documents that are less than a full EIS.

**Table 6-1. Census Tracts in Sample County**

Geographic Unit	Percent Minority	Disproportionate <sup>(a)</sup>	Percent Low-Income <sup>(b)</sup>	Disproportionate <sup>(a)</sup>
United States	16.08	--	13.51	--
State	30.58	--	13.03	--
Sample County	7.35	--	13.24	--
<b>Affected Census Tracts</b>				
1001	1.22	N	11.89	N
1002	0.28	N	10.64	N
1003	11.79	Y	15.66	Y
1004	4.33	N	17.91	Y
1005	75.54	Y	0	N
1006	0.69	N	9.41	N
1007	0	N	7.07	N
1008	4.19	N	10.92	N
1009	4.68	N	15.46	Y
1010	5.32	N	4.61	N

Notes: (a) A census tract is deemed to have a disproportionately high minority and/or low-income populations if the census tract percentage is higher than the Sample County percentage or is at least 50 percent.

(b) Low-income is defined as below poverty level (\$12,764 for a family of four in 1989, as reported in the 1990 Census of Population and Housing).

Source: U.S. Bureau of the Census, 1991.

## FLOWCHART STEP 7: CENSUS TRACT PERCENT LESS THAN COC PERCENT

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7

If the census tract percent is equal to or less than the COC percent, presume no disproportionate effect. Conduct increased outreach to preclude false negatives.

### **What:**

If percentage of minority and low-income populations in an affected census tract are less than the corresponding percentages in the COC overall and less than 50 percent, then it appears and is presumed that there are no disproportionate impacts on minority or low-income populations. Additional outreach may be accomplished to ensure that there are no concentrations of isolated minority or low-income groups within the footprint that could be unfairly impacted.

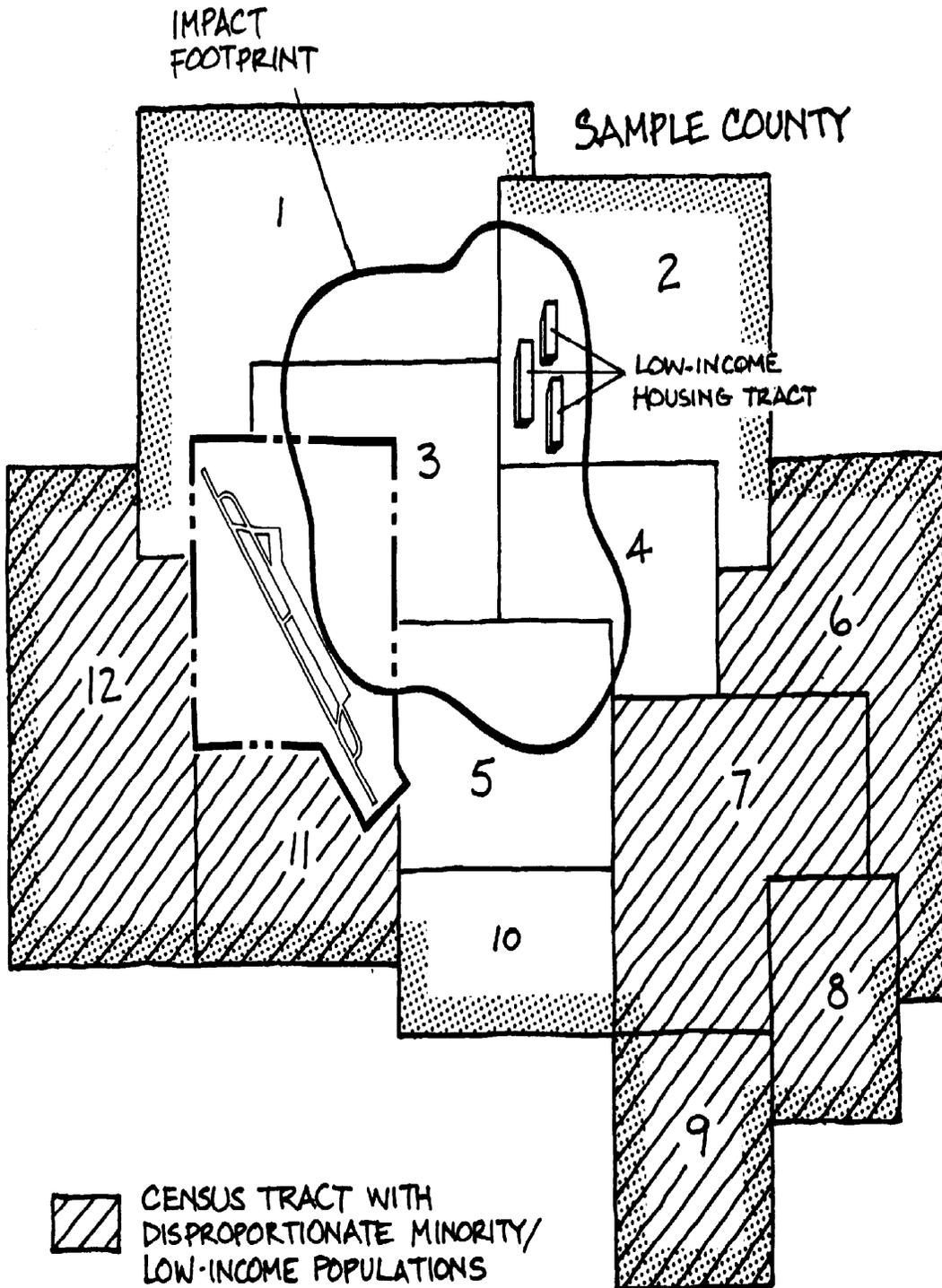
### **Why:**

Census tract data describe demographics of an entire tract. It is not possible to know where within the census tract these groups live from census data alone. Data provided from other sources (e.g., through outreach, issues raised during scoping) may identify isolated groups of minority or low-income populations living within the impact footprint that would otherwise be missed.

### **How:**

If the percentages of minority and low-income populations in the census tract are less than the corresponding percentages for the COC, then it appears that the impacts would not be unfairly distributed. If the percentages of minority and low-income populations in the census tract are only slightly less than the corresponding percentages for the COC, additional outreach and analysis may be necessary to ensure that no minority or low-income populations have been overlooked. Further, if it appears that there may be environmental justice concerns, even though the population percentages for the affected census tracts are noticeably lower than those for the COC, additional outreach and analysis should also be accomplished. Local service organizations (identified in [Flowchart Step 1](#)) should be contacted to identify whether any minority or low-income populations may reside within the impact footprint area. In [Example 7-1](#), although Census Tract 2 overall has a lower percentage of minority and low-income population than the COC, outreach identified a low-income housing tract within the impact footprint. In this case, a potential impact to a low-income population would be identified for that census tract (see sample language in [Flowchart Step 8](#)).

EXAMPLE 7-1



## **FLOWCHART STEP 8: DECLARE NO DISPROPORTIONATE EFFECT**

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**8**

Declare no disproportionate effect in the NEPA document.

### **What:**

Document the data to support a determination that there would be no disproportionately high and adverse impacts on minority or low-income populations.

### **Why:**

The federal agency must support a determination that there would be no disproportionate impacts. Unless the determination is adequately supported, the Environmental Protection Agency, when reviewing the environmental analysis, may not conclude that the Air Force has fully analyzed environmental effects on minority and low-income communities.

### **How:**

Provide information regarding the demographic distribution of the affected census tracts in comparison to the COC. Discuss the numbers of minority and low-income residents, how close or far they may live from the impact footprint area, and explain why they would not be disproportionately impacted. If appropriate, indicate that although the impacts do not appear to be unfairly distributed, some minority or low-income populations may be impacted.

### **SAMPLE LANGUAGE**

*The environmental justice analysis showed that all census tracts that lie under the RESOURCE AREA impact footprint have percentages of minority and low-income populations that are less than the corresponding percentages for NAME County (see table). However, information provided by the SOCIAL SERVICE ORGANIZATION indicated that a low-income housing tract is located at LOCATION, below the RESOURCE AREA impact footprint (see figure). Thus, although the affected census tract does not have a disproportionately high percentage of low-income residents, some low-income populations may be impacted by the proposed action.*

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## FLOWCHART STEP 9: CENSUS TRACT PERCENT GREATER THAN COC PERCENT

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**9**

Presume a disproportionate effect and conduct field verification to preclude false positives.

### What:

If percentages of minority and low-income populations in an affected census tract are greater than the corresponding percentages in the COC overall or greater than 50 percent, then it is presumed that there would be disproportionate impacts on minority or low-income populations. Field verification may be accomplished to ensure that areas of the affected census tracts within the impact footprints are residential areas.

### Why:

Census tract data describe demographics of an entire tract. It is not possible to know where within the census tract these groups live from census data alone. Data from aerial photographs or field reconnaissance may indicate that affected areas are not residential areas, and that there would not be adverse impacts to minority or low-income populations.

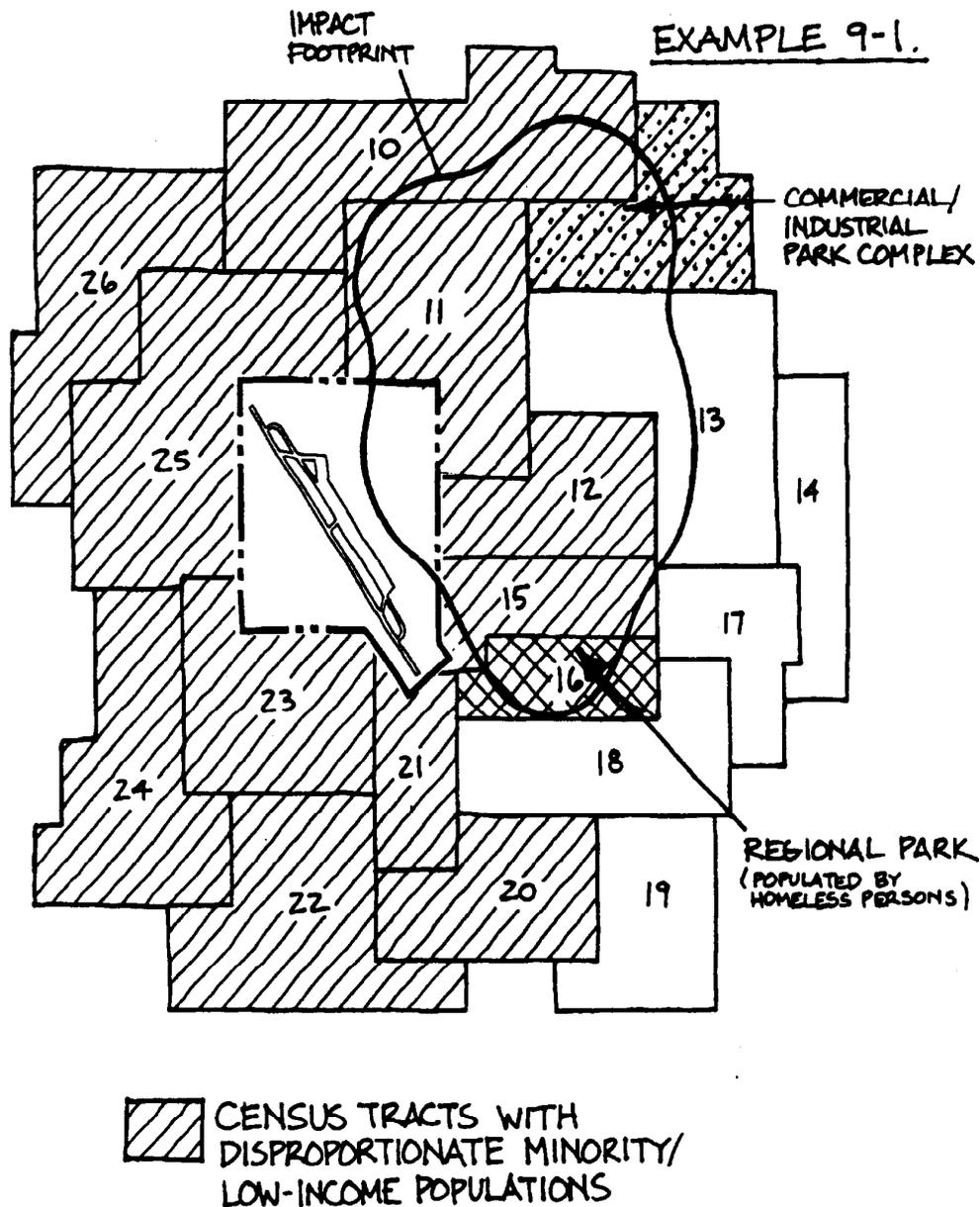
### How:

To identify affected minority and/or low-income populations, compare or overlay the impact footprint for each resource area on a plot of the disproportionately high minority and low-income census tracts in the COC. Potential environmental justice impacts may occur where the impact footprint overlays disproportionately high minority or low-income census tracts and where residential areas would be affected. Environmental justice impacts should be considered as follows:

- ◆ If disproportionately high and adverse environmental impacts occur in a vacant, commercial, or industrial area, no environmental justice impacts would be presumed to occur. Impacts to areas where no residential uses occur can generally be eliminated from further environmental justice analysis.
- ◆ Where an impact footprint overlays a disproportionately high minority or low-income census tract, and residential uses occur within the affected portion of the census tract, environmental justice impacts are presumed to occur. Verification is conducted to determine what land uses occur within the impact footprint.

Verification is often accomplished using the most recent aerial photographs that cover the areas of the impact footprints. The photographs are used to determine what land uses occur within the portion of the census tract within the impact footprint. Field verification may also be conducted in place of aerial photographs or to verify and update the conclusions of the aerial photograph review. Field verification is conducted only to determine land uses, not to verify minority or income status.

In [Example 9-1](#), the impact footprint overlies five disproportionately high minority or low-income population census tracts, tract numbers 10, 11, 12, 15, and 16 shown shaded in the figure. However, review of aerial photographs revealed that the portion of Census Tract 10 under the footprint is a commercial-industrial park complex, and there are no residents who would be impacted. Review of aerial photographs further confirmed residential areas under the impact footprint in Census Tracts 11, 12, and 15, and a regional park in the portion of Census Tract 16 that lies under the impact footprint. However, information obtained from outreach indicated that a large number of homeless people populate the park in Census Tract 16. Therefore, disproportionate impacts would be reported for Census Tracts 11, 12, 15, and 16. The analysis methodology for Census Tract 13, which has a lower percentage of both minority and low-income populations than the COC, was discussed previously at Step 7.



## FLOWCHART STEP 10: DOCUMENT IMPACT(S) AND SUGGEST MITIGATION(S)

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**10**  
Describe in the NEPA document the difference between the percentages (disproportionality) and suggest potential mitigation for the decision maker.

### **What:**

Document the data to support a determination that there would be disproportionate impacts on minority or low-income populations. Identify appropriate mitigation measures or review those measures already proposed earlier in the document.

### **Why:**

The federal agency must support a determination that there would be disproportionate impacts. The President's Memorandum accompanying the Executive Order directs that, whenever feasible, mitigation measures should address significant and adverse effects of the proposed action on minority and low-income populations.

### **How:**

Provide information regarding the demographic distribution of the affected census tracts in comparison to the COC. Discuss the numbers of minority and low-income residents, the kinds of impacts that could occur, and why there may be disproportionate effects. Note that [Table 6-1](#) (in Step 6) identifies disproportionate impacts with a YES or NO. The table does not address the degree of disproportionality (i.e., whether the difference from the COC percentage is great or small). If the proportion of minority or low-income residents in the footprint is less than that of the COC, the table indicates NO disproportionality. If the proportion is greater, or at least 50 percent, the table indicates YES.

When environmental justice impacts could occur, identify appropriate mitigation measures. The environmental justice mitigation discussion should reiterate and summarize the mitigation options identified in the NEPA analysis for that resource. Identify any specific or additional mitigations that would benefit environmental justice populations, and identify the party (the Air Force, other federal agency, or a third party) that would be responsible for implementing the mitigation measures. The decision maker, in the Record of Decision (ROD), will conclude whether the degree of disproportionality merits mitigation and which mitigation measures are appropriate.

**SAMPLE LANGUAGE**

*The environmental justice analysis focused on the areas where there would be adverse environmental impacts, which are all areas within the impact footprint. Demographic analysis showed that the COC, Sample County, has a minority population of 23 percent and a low-income population of 42 percent. Census Tracts 12 and 15 underlie the resource area impact footprint and have minority population percentages greater than 23 percent. Census Tracts 10, 11, and 16 underlie the resource area impact footprint and have low-income population percentages greater than 42 percent. The adverse environmental effects and mitigation measures for this area are previously described in Section XXX. of the EIS.*

*Review of aerial photographs confirmed that residential areas are present in Census Tracts 10, 11, 12, and 15 under the resource area impact footprint. There would be a larger proportion of minority or low-income people receiving the adverse effects of this project than in the COC. The area under the impact footprint in Census Tract 10, however, has been identified as a commercial-industrial park complex; there are no residential areas under the footprint in that census tract. We conclude that minority or low-income populations in these tracts are not bearing a disproportionate share of the adverse impacts.*

*Review of aerial photographs identified a regional park in Census Tract 16 under the impact footprint; however, information provided by the Social Services Organization indicated that a large number of homeless people (population estimated at 100-125) routinely take shelter in the park, and several social service agencies regularly visit the park to distribute blankets, clothing, and food. Thus, there could be disproportionate impacts to a low-income population in this census tract, as well. Mitigation measures, as appropriate, would be identified. For example, one mitigation measure might be "Integrate buffering elements, such as landscaped areas, to provide visual and sound separation of land use components which would benefit those individuals seeking shelter in Census Tract 16." Mitigation measures for this area are also described in Section XXX. of the EIS.*

Example text for an environmental justice analysis section in an EIS is presented in [Appendix E](#).

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**APPENDIX A**  
**GLOSSARY/ACRONYMS**

## APPENDIX A

### GLOSSARY/ACRONYMS

#### GLOSSARY

**Adverse Impact.** An impact that would have a deleterious effect on human health or the environment that is significant, unacceptable, or above generally accepted norms. Such effects may include ecological, cultural, human health, economic, or social impacts when interrelated with the natural or physical environment.

**Block Numbering Area (BNA).** A census jurisdictional boundary used to subdivide a number of nonmetropolitan counties in census tract-type number ranges.

**Census Tract.** Small, relatively permanent statistical subdivisions of a county that are delineated for all metropolitan areas and other densely populated counties.

**Community of Comparison (COC).** The smallest political unit(s) that encompasses the impact area of an environmental resource. The COC provides a more regional context for comparison of minority and low-income population percentages in individual affected census tracts, to help determine whether impacts would be disproportionate.

**Disproportionately high minority and/or low-income area.** A census tract or block numbering area in which the percentage of minority and/or low-income population is greater than that of the community of comparison as a whole.

**Environmental Justice.** An identification of potential disproportionately high and adverse human health or environmental effects on minority and/or low-income populations that may result from proposed federal undertakings (required by [Executive Order 12898](#) ).

**Executive Order 12898.** Issued by the President on February 11, 1994, this Executive Order requires federal agencies to develop implementation strategies, identify minority and low-income populations that may be disproportionately impacted by proposed federal actions, and solicit the participation of minority and low-income populations.

**Impact Footprint.** The area of projected adverse impacts for a resource, based on environmental analysis of a proposed activity.

**Low-Income Population.** Persons below the poverty level, designated as \$12,674 for a family of four in 1989 by the U.S. Bureau of the Census.

**Minority Population.** Persons designated as Black; American Indian, Eskimo, or Aleut; Asian or Pacific Islander; Other; and of Hispanic origin in census data.

## ACRONYMS

AFI	Air Force Instruction
BNA	block numbering area
CATEX	Category Exclusion
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Community of Comparison
EA	environmental assessment
EIAP	Environmental Impact Analysis Process
EIS	environmental impact statement
EO	Executive Order
FONSI	Finding of No Significant Impact
NAACP	National Association for the Advancement of Colored People
NEPA	National Environmental Policy Act
RAB	Restoration Advisory Board
ROD	Record of Decision

**APPENDIX B**

**EXECUTIVE ORDER 12898  
WITH EXECUTIVE MEMORANDUM**

THE WHITE HOUSE  
WASHINGTON

February 11, 1994

MEMORANDUM FOR THE HEADS OF ALL DEPARTMENTS AND AGENCIES

SUBJECT: Executive Order on Federal Actions to Address  
Environmental Justice in Minority Populations and  
Low-Income Populations

Today I have issued an Executive order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. That order is designed to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice. That order is also intended to promote nondiscrimination in Federal programs substantially affecting human health and the environment, and to provide minority communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.

The purpose of this separate memorandum is to underscore certain provision of existing law that can help ensure that all communities and persons across this Nation live in a safe and healthful environment. Environmental and civil rights statutes provide many opportunities to address environmental hazards in minority communities and low-income communities. Application of these existing statutory provisions is an important part of this Administration's efforts to prevent those minority communities and low-income communities from being subject to disproportionately high and adverse environmental effects.

I am therefore today directing that all department and agency heads take appropriate and necessary steps to ensure that the following specific directives are implemented immediately:

In accordance with Title VI of the Civil Rights Act of 1964, each Federal agency shall ensure that all programs or activities receiving Federal financial assistance that affect human health

or the environment do not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin.

Each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. section 4321 et seq. Mitigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental effects of proposed Federal actions on minority communities and low-income communities.

Each Federal agency shall provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of meetings, crucial documents, and notices.

The Environmental Protection Agency, when reviewing environmental effects of proposed action of other federal agencies under section 309 of the Clean Air Act, 42 U.S.C. section 7609, shall ensure that the involved agency has fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects.

Each Federal agency shall ensure that the public, including minority communities and low-income communities, has adequate access to public information relating to human health or environmental planning, regulations, and enforcement when required under the Freedom of Information Act, 5 U.S.C. section 552, the Sunshine Act, 5 U.S.C. section 552b, and the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11044.

\* \* \*

This memorandum is intended only to improve the internal management of the Executive Branch and is not intended to, nor does it create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a

party against the United States, its agencies, its officers, or any person.

//s// William J. Clinton

EXECUTIVE ORDER

. . . . .

FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE  
IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

By the authority vested in me as President by the constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1-1. Implementation.

1-101. Agency Responsibilities. To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1-102. Creation of an Interagency Working Group on Environmental Justice. (a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency ("Administrator") or the Administrator's designee shall convene an interagency Federal Working Group on Environmental Justice ("Working Group"). The Working Group shall comprise the heads of the following executive agencies and offices, or their

designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy.

(b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(2) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency as it develops an environmental justice strategy as required by section 1-103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner;

(3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3-3 of this order;

(4) assist in coordinating data collection, required by this order;

(5) examine existing data and studies on environmental justice;

(6) hold public meetings as required in section 5-502(d) of this order; and

(7) develop interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1-103. Development of Agency Strategies.

(a) Except as provided in section 6-605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b)-(e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in

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areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the

health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

(b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process.

(c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy.

(d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy.

(e) Within 12 months of the date of this order, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. During the 12 month period from the date of this order, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns

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identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects.

(f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on

its progress in implementing its agency-wide environmental justice strategy.

(g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1-104. Reports to the President. Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1-103(e) of this order.

Sec. 2-2. Federal Agency Responsibilities for Federal Programs. Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

Sec. 3-3. Research, Data Collection, and Analysis.

3-301. Human Health and Environmental Research and Analysis. (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations and workers who may be exposed to substantial environmental hazards.

(b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

(c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order.

3-302. Human Health and Environmental Data Collection and Analysis. To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(b) In connection with the development and implementation of agency strategies in section 1-103 of

this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action. Such information shall be made available to the public unless prohibited by law; and

(c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001-11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public, unless prohibited by law.

(d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among

Federal agencies and with State, local, and tribal governments.

Sec. 4-4. Subsistence Consumption of Fish and Wildlife.

4-401. Consumption Patterns. In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4-402. Guidance. Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5-5. Public Participation and Access to Information. (a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group.

(b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents,

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notices, and hearings relating to human health or the environment for limited English speaking populations.

(c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.

(d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding, receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

Sec. 6-6. General Provisions.

6-601. Responsibility for Agency Implementation.

The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6-602. Executive Order No. 12250. This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6-603. Executive Order No. 12875. This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

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6-604. Scope. For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provision of this order.

6-605. Petitions for Exemptions. The head of a Federal agency may petition the President for an exemption from the requirements of this order on the

grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6-606. Native American Programs. Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition, the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian Tribes.

6-607. Costs. Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6-608. General. Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6-609. Judicial Review. This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any

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right, benefit, or tr responsibility, substantive or procedural, enforceable at law equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance of the United States, its agencies, its officers or any other person with this order.

//s// William J. Clinton

THE WHITE HOUSE,

February 11, 1994.

**APPENDIX C**  
**SAMPLE SCOPING LETTER**

MEMORANDUM FOR INTERESTED ORGANIZATIONS

FROM: Name  
Street Address  
City, State Zip Code

SUBJECT: Environmental Impact Statement (EIS) for Realignment of 934th ARW to Sample AFB,  
Texas: Environmental Justice Outreach

We are pleased to provide you the attached project description for the proposed Realignment of the 934th ARW to Sample AFB, Texas. In accordance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and the accompanying Presidential Memorandum of February 11, 1994, we will analyze possible environmental justice impacts from the realignment of the 934th ARW as part of the EIS.

Your organization has been identified by the Air Force as part of the outreach effort under Executive Order 12898. If you are familiar with any other organizations that should be included in the planning processes, please provide them a copy of this memorandum or contact the Air Force at the number listed below.

To ensure sufficient time to adequately consider public comments concerning issues associated with the proposed realignment, the Air Force recommends that comments be presented at the November 3, 1996, Scoping Meeting at the Town Hall at 7:00 p.m. for the EIS or forwarded to the address listed below at the earliest possible date. The Air Force will, however, accept additional comments at any time during the environmental impact analysis process.

Please direct written comments or request further information concerning the proposed realignment of the 934th ARW to:

Name  
Street Address  
City, State Zip Code  
Phone Number

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**APPENDIX D**  
**CALCULATING AND COMPARING DEMOGRAPHIC DATA**

## APPENDIX D

### PART ONE: CALCULATING AND COMPARING DEMOGRAPHIC DATA

The text in [Step 6](#) presents a summary description of calculating and comparing demographic data for census tracts and the COC to help identify affected tracts that contain disproportionately high percentages of minority or low-income populations . [Table 6-1](#) is an example of how the data should be presented in the environmental document. A more detailed description of specific data sources and calculations that can be used to obtain the information to be presented in the table is provided in the following paragraphs.

**Sources of Demographic Data:** The most recent Bureau of the Census data for the identified COC should be obtained. The two sources of data used for environmental justice analysis are:

- ◆ The Topographically Integrated Geographic Encoding and Referencing (TIGER) files
- ◆ The Summary Tape File 3, containing the most recent Census of Population and Housing data.

Both sources contain statistics for three census jurisdictions : state, county, and either census tracts or BNAs. These sources are available on CD-ROM by contacting:

U.S. Department of Commerce Bureau of the Census Customer Services (301) 457-4100 Internet: <a href="http://www.census.gov/ftp/pub/hhes/www/">http://www.census.gov/ftp/pub/hhes/www/</a>
---

The TIGER files contain Geographic Information System (GIS) data showing the BNAs or census tracts in a county in graphic form. The TIGER files may be used to create a plot of the BNAs/ census tracts in the COC.

The Summary Tape File provides population and poverty status statistics in [Table P-12](#), Hispanic Origin by Race, and [Table P-119](#), Poverty Status in 1989 by Race by Age . [Tables D-1](#) and [D-2](#) show examples of [Tables P-12](#) and [P-119](#), respectively, for two census tracts (1001 and 1003). The statistics are retrieved from the CD-ROM and inserted into spreadsheets. [Table D-3](#) shows part of a spreadsheet containing data for census tracts in the COC, including Census Tracts 1001 and 1003.

**Minority Population Data:** [Table P-12](#), Hispanic Origin by Race (see [Table D-1](#)), reports population by Persons Not of Hispanic Origin and Persons of Hispanic Origin separately. The data for both Persons Not of Hispanic Origin and Persons of Hispanic Origin are subdivided by racial categories of White; Black; American Indian, Eskimo, or Aleut; Asian or Pacific Islander; and Other. All persons of Hispanic origin, regardless of race, and all persons not of Hispanic origin other than White are considered minority groups. These are summed to obtain the total minority population within each census tract in the COC. An example of calculating the minority population from [Table D-1](#) is as follows:

<p><b><i>Minority Population:</i></b> <b><i>All persons of Hispanic origin, regardless of race, and all persons not of Hispanic origin other than White are considered minority groups.</i></b></p>
---

Table D-1. Summary Tape File 3, Table P-12, Hispanic Origin by Race

1990 Census of Population And Housing Summary Tape File 3A

040 New York  
 050 Clinton County  
 140 Tract 1001

HISPANIC ORIGIN BY RACE

Universe: Persons

Not of Hispanic origin:

White .....	5,725
Black .....	16
American Indian, Eskimo, or Aleut .....	6
Asian or Pacific Islander .....	22
Other race .....	0

Hispanic origin:

White .....	19
Black .....	0
American Indian, Eskimo, or Aleut .....	0
Asian or Pacific Islander .....	0
Other race .....	8

1990 Census Of Population And Housing Summary Tape File 3A

040 New York  
 050 Clinton County  
 140 Tract 1003

HISPANIC ORIGIN BY RACE

Universe: Persons

Not of Hispanic origin:

White .....	5,090
Black .....	362
American Indian, Eskimo, or Aleut .....	10
Asian or Pacific Islander .....	9
Other race .....	0

Hispanic origin:

White .....	128
Black .....	54
American Indian, Eskimo, or Aleut .....	3
Asian or Pacific Islander .....	0
Other race .....	114

**Table D-2. Summary Tape File 3, Table P-119, Poverty Status in 1989 by Race by Age  
(Page 1 of 4)**

1990 Census of Population And Housing Summary Tape File 3A  
 040 New York  
 050 Clinton County  
 140 Tract 1001

**POVERTY STATUS IN 1989 BY RACE BY AGE**

Universe: Persons for whom poverty status is determined

**Income in 1989 above poverty level:**

**White**

Under 5 years .....	338
5 years .....	47
6 to 11 years .....	465
12 to 17 years .....	470
18 to 64 years .....	3,099
65 to 74 years .....	347
75 years and over .....	216

**Black**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	2
12 to 17 years .....	2
18 to 64 years .....	8
65 to 74 years .....	0
75 years and over .....	0

**American Indian, Eskimo, or Aleut:**

Under 5 years .....	2
5 years .....	2
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	2
65 to 74 years .....	0
75 years and over .....	0

**Asian or Pacific Islander:**

Under 5 years .....	4
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	16
65 to 74 years .....	0
75 years and over .....	2

**Other race:**

Under 5 years .....	4
5 years .....	0
6 to 11 years .....	2
12 to 17 years .....	0
18 to 64 years .....	2
65 to 74 years .....	0
75 years and over .....	0

**Table D-2. Summary Tape File 3, Table P-119, Poverty Status in 1989 by Race by Age  
(Page 2 of 4)**

<b>Income in 1989 below poverty level:</b>	
<b>White</b>	
Under 5 years .....	55
5 years .....	6
6 to 11 years .....	70
12 to 17 years .....	56
18 to 64 years .....	329
65 to 74 years .....	79
75 years and over .....	84
<b>Black</b>	
Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0
<b>American Indian, Eskimo, or Aleut:</b>	
Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0
<b>Asian or Pacific Islander:</b>	
Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0
<b>Other race:</b>	
Under 5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0

**Table D-2. Summary Tape File 3, Table P-119, Poverty Status in 1989 by Race by Age  
(Page 3 of 4)**

1990 Census of Population And Housing Summary Tape File 3A

040 New York  
050 Clinton County  
140 Tract 1003

**POVERTY STATUS IN 1989 BY RACE BY AGE**

Universe: Persons for whom poverty status is determined

**Income in 1989 above poverty level:**

**White**

Under 5 years .....	342
5 years .....	91
6 to 11 years .....	397
12 to 17 years .....	405
18 to 64 years .....	2,644
65 to 74 years .....	241
75 years and over .....	148

**Black**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	10
65 to 74 years .....	4
75 years and over .....	0

**American Indian, Eskimo, or Aleut:**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	4
12 to 17 years .....	0
18 to 64 years .....	9
65 to 74 years .....	0
75 years and over .....	0

**Asian or Pacific Islander:**

Under 5 years .....	2
5 years .....	0
6 to 11 years .....	2
12 to 17 years .....	0
18 to 64 years .....	3
65 to 74 years .....	0
75 years and over .....	0

**Other race:**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0

**Table D-2. Summary Tape File 3, Table P-119, Poverty Status in 1989 by Race by Age  
(Page 4 of 4)**

**Income in 1989 below poverty level:**

**White**

Under 5 years .....	97
5 years .....	14
6 to 11 years .....	88
12 to 17 years .....	53
18 to 64 years .....	425
65 to 74 years .....	40
75 years and over .....	78

**Black**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	2
75 years and over .....	0

**American Indian, Eskimo, or Aleut:**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0

**Asian or Pacific Islander:**

Under 5 years .....	0
5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	2
65 to 74 years .....	0
75 years and over .....	0

**Other race:**

Under 5 years .....	0
6 to 11 years .....	0
12 to 17 years .....	0
18 to 64 years .....	0
65 to 74 years .....	0
75 years and over .....	0

1. Add total of all Persons of Hispanic Origin. For Census Tract 1001, this would be 19 White and 8 Other persons for a total of 27 Persons of Hispanic Origin.
2. Add total of all minority Persons Not of Hispanic Origin. For Census Tract 1001 this would be 16 Black; 6 American Indian, Eskimo, or Aleut; and 22 Asian or Pacific Islanders, for a total of 44 minority Persons Not of Hispanic Origin. The total Minority Persons Not of Hispanic Origin (44) should then be added to the 27 Persons of Hispanic Origin for a total minority population for this census tract of 71.
3. The above data are entered into the spreadsheets for each census tract (see [Table D-3](#)).

Census Tract 1003 has a minority total of 680 persons (see [Table D-1](#)).

**Low-Income Population Data:** [Table P-119](#), Poverty Status in 1989 by Race by Age (see [Table D-2](#)), reports the number of persons above and below the poverty level, which was \$12,674 for a family of four in 1989. The data are reported by the racial categories of White; Black; American Indian, Eskimo, or Aleut; Asian or Pacific Islander; and Other, but does not separate Persons Not of Hispanic Origin and Persons of Hispanic Origin. Each of these five racial categories is subdivided into seven age ranges (under 5 years, 5 years, 6 to 11 years, 12 to 17 years, 18 to 64 years, 65 to 74 years, 75 years and over). The numbers of people in these age ranges within each racial group are aggregated to obtain the total number of people in each census tract living above and below the poverty level in each of the five racial categories. The number of people in all racial categories living above and below the poverty level should be summed to obtain the total population living above and below the poverty level within each census tract in the COC. An example of calculating the low-income population from [Table D-2](#) is as follows:

**Low-Income Population:**  
*Low-income populations are defined as those persons living below the poverty level, identified as an income of \$12,674 or less for a family of four in 1989.*

1. Sum the population living above the poverty level. For Census Tract 1001, this would be 4,982 White; 12 Black; 6 American Indian, Eskimo, or Aleut; 22 Asian or Pacific Islander; and 8 Other persons for a total of 5,030 persons living above the poverty level.
2. Sum the populations living below the poverty level. For Census Tract 1001 this would be 679 White persons.
3. Enter the data from Steps 1 and 2 into spreadsheets for each census tract (see [Table D-3](#)).

Census Tract 1003 has totals of 4,302 persons living above and 799 persons living below the poverty level (see [Table D-2](#)).

**Calculating Population Percentages:** Data from all of the census tracts within the COC are summed to produce COC totals for these statistics (depending on the governmental unit, data for percent minority and low-income populations may be available separately for the COC, for example, from county census data). The COC totals are also entered into the spreadsheet containing the data for each census tract. The minority and poverty level statistics for each category within each census tract are compared to the census tract total population to determine the percentage of minority and

**Table D-3. Model AFB Demographic Summary- Sample County**

CENSUS CATEGORY	COUNTY TOTAL	% OF COUNTY ^TOTAL	TRACT 1001	% OF TRACT ^TOTAL	TRACT 1002	% OF TRACT ^TOTAL	TRACT 1003	% OF TRACT ^TOTAL	TRACT 1004	% OF TRACT ^TOTAL
<b>PERSONS</b>	85,969	100.00	5,796	100.00	3,890	100.00	5,770	100.00	4,877	100.00
WHITE	79,653	92.65	5,725	98.78	3,879	99.72	5,090	88.21	4,666	95.67
MINORITY TOTAL	6,316	7.35	71	1.22	11	0.28	680	11.79	211	4.33
BLACK	3,318	3.86	16	0.28	5	0.13	362	6.27	110	2.26
AMERICAN INDIAN, ESKIMO, OR ALEUT	206	0.24	6	0.10	0	0.00	10	0.17	22	0.45
ASIAN OR PACIFIC ISLANDER	646	0.75	22	0.38	0	0.00	9	0.16	0	0.00
HISPANIC	2,109	2.45	27	0.47	6	0.15	299	5.18	79	1.62
OTHER	37	0.04	0	0.00	0	0.00	0	0.00	0	0.00
<b>GROUP QUARTERS</b>	8,127	100.00	73	1.26	20	0.51	665	11.53	174	3.57
MILITARY QUARTERS	1,067	13.13	0	0.00	0	0.00	0	0.00	0	0.00
HOMELESS SHELTERS	4	0.05	0	0.00	0	0.00	0	0.00	0	0.00
VISIBLE IN STREET LOCATIONS	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
OTHER	7,056	86.82	73	1.26	20	0.51	665	11.53	174	3.57
<b>HOUSEHOLDS</b>	29,202	^NA	2,255	^NA	1,357	^NA	1,803	^NA	1,736	^NA
<b>POVERTY STATUS IN 1989 BY RACE (a)</b>	77,723	100.00	5,709	100.00	3,863	100.00	5,101	100.00	4,701	100.00
INCOME IN 1989 ABOVE POVERTY LEVEL	67,429	86.76	5,030	88.11	3,452	89.36	4,302	84.34	3,859	82.09
WHITE	65,445	84.20	4,982	87.27	3,447	89.23	4,268	83.67	3,835	81.58
MINORITY TOTAL	1,984	2.55	48	0.84	5	0.13	34	0.67	24	0.51
BLACK	997	1.28	12	0.21	5	0.13	14	0.27	2	0.04
AMERICAN INDIAN, ESKIMO, OR ALEUT	171	0.22	6	0.11	0	0.00	13	0.25	22	0.47
ASIAN OR PACIFIC ISLANDER	557	0.72	22	0.39	0	0.00	7	0.14	0	0.00
OTHER	259	0.33	8	0.14	0	0.00	0	0.00	0	0.00
INCOME IN 1989 BELOW POVERTY LEVEL	10,294	13.24	679	11.89	411	10.64	799	15.66	842	17.91
WHITE	9,967	12.82	679	11.89	411	10.64	795	15.59	842	17.91
MINORITY TOTAL	327	0.42	0	0.00	0	0.00	4	0.08	0	0.00
BLACK	216	0.28	0	0.00	0	0.00	2	0.04	0	0.00
AMERICAN INDIAN, ESKIMO, OR ALEUT	26	0.03	0	0.00	0	0.00	0	0.00	0	0.00
ASIAN OR PACIFIC ISLANDER	55	0.07	0	0.00	0	0.00	2	0.04	0	0.00
OTHER	30	0.04	0	0.00	0	0.00	0	0.00	0	0.00

low-income persons in that census tract. An example of calculating the minority and low-income population percentages for each census tract using [Table D-3](#), Census Tract 1001, is as follows:

1. Calculate minority percentage. Divide the minority total (71) by the total population (5,796) to obtain the minority percentage for Census Tract 1001 of 1.22 percent.
2. Calculate low-income percentage. Divide the income below the poverty level (679) by the total population for which income data was taken (5,709) to obtain the low-income level percentage for Census Tract 1001 of 11.89 percent.
3. Repeat Steps 1 and 2 to calculate the COC totals using the data from each individual census tract. In the example shown in [Table D-3](#), the county (COC) average minority population is 7.35 percent and the low-income population is 13.24 percent ([Table D-4](#)).

**Table D-4. Census Tracts in Sample County**

Geographic Unit	Percent Minority	Disproportionate <sup>(a)</sup>	Percent Low-Income <sup>(b)</sup>	Disproportionate <sup>(a)</sup>
United States	16.08	--	13.51	--
State	30.58	--	13.03	--
Sample County	7.35	--	13.24	--
<b>Affected Census Tracts</b>				
1001	1.22	N	11.89	N
1002	0.28	N	10.64	N
1003	11.79	Y	15.66	Y
1004	4.33	N	17.91	Y
1005	75.54	Y	0	N
1006	0.69	N	9.41	N
1007	0	N	7.07	N
1008	4.19	N	10.92	N
1009	4.68	N	15.46	Y
1010	5.32	N	4.61	N

Notes: (a) A census tract is deemed to have disproportionately high minority and/or low-income populations if the census tract percentage is higher than the Sample County percentage or is at least 50 percent.

(b) Low-income is defined as below poverty level (\$12,764 for a family of four in 1989, as reported in the 1990 Census of Population and Housing).

Source: U.S. Bureau of the Census, 1991.

The population and poverty status statistics cannot be directly compared for two reasons:

- ◆ The poverty status does not capture all of the reported population. This is mainly due to incomplete reporting by respondents to the census questionnaire. For example, for Census Tract 1001, total population listed by racial breakdown is 5,796, whereas the total population living above and below the poverty level is only 5,709 (see [Table D-3](#)). Therefore, the poverty status statistics are only a sample of the total population in a jurisdiction.
- ◆ The population statistic is broken down into Persons Not of Hispanic Origin and Persons of Hispanic Origin. The poverty status statistic combines these categories without reporting each individually. In

Census Tract 1001 (see [Table D-3](#)), the total of 5,725 White persons reported in the population statistic cannot be compared to the 4,982 and 679 White persons living above and below the poverty level, respectively (total of 5,661). The population statistic includes only Whites not of Hispanic origin, whereas the poverty statistic combines Whites both of Hispanic origin and not of Hispanic origin.

To determine whether the affected census tracts (those that touch the impact footprint) have disproportionately high minority or low-income populations, the percentage of each of these groups within each affected census tract is compared to the overall COC percentage for these categories. Minority populations and low-income populations are separate groups, and the comparison should be made for each percentage. A census tract may have a disproportionately high minority population, but its low-income population may be below the average COC percentage for low-income residents.

In the example (see [Table D-4](#)), minority and low-income percentages were calculated, and are shown, only for the affected census tracts, which are those that lie under the impact footprint. The table shows that Census Tract 1003 has both minority and low-income population percentages that are greater than the corresponding percentages for Sample County, the COC. Census Tract 1005 has a greater minority percentage than the COC, but a lower low-income percentage, whereas Census Tracts 1004 and 1009 have minority percentages that are less than that of the COC, but their low-income percentages are greater.

## **PART TWO: OTHER SOURCES OF DEMOGRAPHIC DATA**

There are various circumstances in which doing a full environmental justice demographic analysis is not feasible. Further, there are other circumstances under which such a full analysis may not be prudent. In such cases, it is often feasible to obtain demographic data from sources other than those identified in Part One of this Appendix. Some of these other sources are presented below.

- ◆ Many local governmental libraries, particularly main and regional branches, are recipients of, or can access, printed or computerized census data reports that are generally found in the Governments Documents sections of these libraries.
- ◆ U.S. Bureau of the Census State Data Centers often provide standard or customized census data reports for a fee. These reports are printed or are in computerized form, and can be presented at various levels (i.e., census tract, block numbering area, county, zip code).
- ◆ General demographic data, such as those for population and income levels, are quite often available from city and town, county, areawide, and state planning agencies. In many cases, these planning agencies have prepared various types of population and economic analyses. Some of these analyses may include those that deal with minority and low-income groups. In these latter circumstances, sometimes all that is needed is a supplemental environmental justice analysis geared to the particular needs at hand.
- ◆ Public and private universities and colleges, and state or university extension centers often develop and maintain demographic and economic data and analyses, some of which can be used for environmental justice purposes.

- ◆ Many local and nationwide private consulting firms specializing in or having capabilities in such areas as urban planning, economic analysis, and marketing research will provide customized reports on a fee basis.
- ◆ Major lending institutions may keep demographic data, such as income and population characteristics, for statistical analysis relating to loan default risk or for marketing purposes. These data are generally releasable to certain governmental agencies.
- ◆ The Internet, including the worldwide WEB, is increasingly and quite rapidly making demographic data available. Perhaps the best place to start in this regard is the U.S. Bureau of the Census, whose general Internet address is : <http://www.census.gov>.

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**APPENDIX E**  
**EXAMPLE ENVIRONMENTAL JUSTICE ANALYSIS**

## APPENDIX E

### SAMPLE ENVIRONMENTAL JUSTICE ANALYSIS

#### 3.7 ENVIRONMENTAL JUSTICE

##### 3.7.1 Background

*In an NEPA document, environmental justice should appear as the last section in the Affected Environment and Environmental Consequences chapters, and as a separate appendix that explains the analysis methodology. This separation in the document emphasizes to the reader and the decisionmaker that environmental justice is a distinct analysis, with its own unique methodology that is different from the basic NEPA analysis.*

**Executive Order (EO) 12898**, Environmental Justice, was issued by the President on February 11, 1994. Objectives of the EO, as it pertains to this environmental impact statement (EIS), include development of federal agency implementation strategies, identification of minority and low-income populations where proposed federal actions have disproportionately high and adverse human health and environmental effects, and participation of minority and income populations populations. Accompanying EO 12898 was a Presidential Transmittal Memorandum that referenced existing federal statutes and regulations to be used in conjunction with EO 12898. The memorandum addressed the use of the policies and procedures of the National Environmental Policy Act (NEPA). Specifically, the memorandum indicates that, "Each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA 42 U.S.C. section 4321, et. seq." Although an environmental justice analysis is not mandated by NEPA or by Air Force Instruction (AFI) 32-7061, the Department of Defense (DOD) has directed that NEPA will be used as the primary approach to implement the provisions of the Executive Order.

##### 3.7.2 Demographic Analysis

Although EO 12898 provides no guidelines as to how to determine concentrations of minority or low-income populations, the demographic analysis provides information on the approximate locations of minority and low-income populations in the area potentially affected by the proposed actions at Model AFB. Most environmental impacts resulting from the action would be expected to occur within Example County.

The 1990 Census of Population and Housing reports numbers of both minority and poverty residents. Minority populations included in the census are identified as Black; American Indian, Eskimo, or Aleut; Asian or Pacific Islander; Hispanic; or Other. Poverty status (used in this EIS) to define low-income status) is reported as the number of families with income below poverty level (\$12,764 for a family of four in 1989, as reported in the 1990 Census of Population and Housing). Based upon the 1990 Census of Population and Housing, Example County had a population of 72,669 persons. Of this total, 3,056 persons, or 4.21 percent, were minority, and 8,477 persons, or 12.90 percent, were low income.

Information provided by local social services agencies identified that there are neighborhoods containing both minority and low-income populations in areas north and east of Model AFB, within approximately 5 miles of the base. In the past, residents in these areas have raised concerns about high noise levels associated with military aircraft operations.

## 4.7 ENVIRONMENTAL JUSTICE

The analysis conducted for this EIS included a review of influencing factors (local community resources), and a discussion of resulting impacts associated with hazardous materials and hazardous waste management and the natural environment. Local community resources (e.g., community setting, land use and aesthetics, transportation, utilities) have been identified as influencing factors only and, therefore, would not have disproportionately high and adverse human health and environmental effects on minority and low-income populations.

Environmental justice impacts can arise, however, as a result of the use of hazardous materials and generation of hazardous waste. Impacts associated with the Installation Restoration Program may occur regardless of implementation of the Proposed Action and alternatives. Impacts may also occur to geology and soils, water resources, air quality, noise, and biological and cultural resources as a result of reuse-related development activities.

Based upon the analysis conducted for this EIS, hazardous materials and hazardous waste management, geology and soils, water resources, and biological and cultural resources impacts resulting from the Proposed Action and alternatives would be contained within the Model AFB boundary. Activities that would affect air quality would occur basinwide. Thus, no disproportionately high and adverse impacts to minority and low-income populations would be expected for these resources, and an environmental justice analysis was not conducted.

Aircraft and surface traffic activities associated with the Proposed Action and alternatives may cause an increase in noise in certain off-base areas (see [Figure 4-7.2](#)). Therefore, an environmental justice analysis was conducted to determine whether there would be disproportionately high and adverse noise impacts on minority and low-income populations as a result of the Proposed Action.

The environmental impact analysis indicates that adverse environmental impacts would occur within Example County. Therefore, the community of comparison (COC), used to establish proportionality, is defined as Example County.

In developing statistics for the 1990 Census of Population and Housing, the U.S. Department of Commerce, Bureau of the Census, has identified small subdivisions, called census tracts, used to group statistical census data. In order to determine whether disproportionate impacts to minority or low-income populations would result from the Proposed Action or alternatives, census data for each census tract that underlies an impact footprint were analyzed to determine if these census tracts contain a disproportionately high percentage of minority and/or low-income residents. This is calculated by comparing the percentage of minority residents and the percentage of low-income residents in each census tract with the corresponding percentages in Example County, the COC ([Table 4-7.1](#)). The results of the environmental justice analysis are discussed below.

#### **4.7.1 Surface Traffic Noise**

As discussed in Section 4.4.4, adverse surface traffic noise impacts were identified for those roadway segments where additional residents would be exposed to surface traffic noise of day-night-average noise level (DNL) 65 decibels (dB) and above when compared to the No-Action Alternative. Impacts to road segments that are not located within disproportionate census tracts were eliminated from analysis, unless otherwise indicated by field verification.

**4.7.1.1 Proposed Action.** Under the Proposed Action, increased surface traffic noise would occur in one disproportionate census tract. These impacts would affect approximately 42 additional residents by 2015 along State Highway 35, between County Road 553 and Marshall Drive, within Census Tract 25 ( [Figure 4.7-1](#)).

**4.7.1.2 Alternative A.** Under Alternative A, increased surface traffic noise would be the same as for the Proposed Action, except only 31 additional residents by 2015 would be affected along State Highway 35.

**4.7.1.3 Alternative B.** Under Alternative B, surface traffic noise impacts would not occur in any disproportionate census tract.

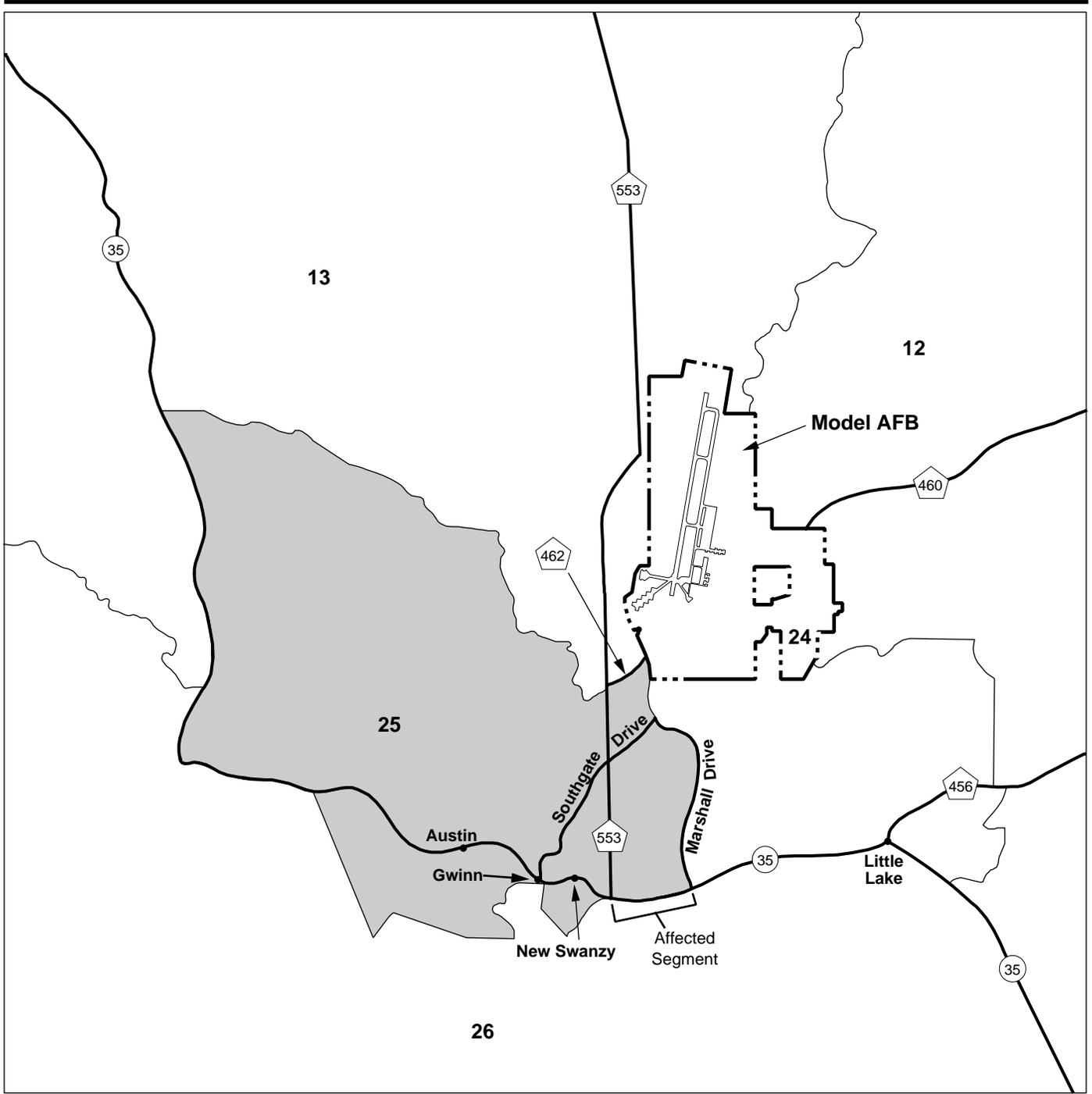
#### **Mitigation Measures**

Mitigation measures for potential environmental justice impacts associated with surface traffic noise would be similar to those identified for other noise impacts under the Proposed Action (Section 4.4.4.1). For surface traffic noise mitigations, a sound insulation program could be implemented to reduce interior noise levels for sensitive receptors exposed to DNL 65 dB or greater. Noise reduction inside buildings can be accomplished by incorporating solid core wood or steel-faced exterior doors, non-opening dual pane windows, and aggregate block walls into the building design, and limiting the total square footage of windows to no more than 10 percent of exterior exposed walls. These features can reduce interior noise levels by as much as 26 to 53 A-weighted dB when properly designed and constructed. For future development, county and township land use planning could incorporate noise compatibility measures when establishing residential zoning. Measures such as restricting residential development to areas outside the DNL 65 dB contour and incorporating buffer zones into community development could be used. The effectiveness of the operational and management noise mitigation

**Table 4.7-1. Demographic Data - Example County**

Geographic Unit	Percent Minority	Disproportionately High <sup>(a)</sup>	Percent Low Income <sup>(b)</sup>	Disproportionately High <sup>(a)</sup>
United States	16.08	--	13.51	--
State	17.59	--	13.12	--
<b>Example County</b>	4.21	--	12.81	--
<b>Census Tracts</b>				
1	4.28	Y	13.92	Y
2	1.61	N	11.63	N
3	4.51	Y	23.57	Y
4	1.44	N	8.11	N
5	7.04	Y	48.59	Y
6	4.37	Y	30.40	Y
7	2.66	N	12.69	N
8	2.56	N	24.30	Y
9	3.12	N	8.67	N
10	55.95	Y	0	N
11	4.00	N	6.44	N
12	4.08	N	10.79	N
13	2.59	N	10.10	N
14	4.32	Y	10.37	N
15	0.88	N	7.52	N
16	2.39	N	13.17	Y
17	1.55	N	13.75	Y
18	0.77	N	9.32	N
19	0.72	N	21.00	Y
20	0.38	N	16.59	Y
21	0.46	N	5.45	N
22	1.25	N	9.41	N
23	0.44	N	15.44	Y
24	12.86	Y	9.43	N
25	6.97	Y	13.88	Y
26	2.86	N	12.70	N

Notes: (a) A census tract is deemed to have a disproportionately high number of minority and/or low-income populations if the tract's percentage is higher than the Example County percentage.  
 (b) Low income is defined as below the poverty level (\$12,764 for a family of four in 1989, as reported in the 1990 Census of Population and Housing).



**EXPLANATION**

- Base Boundary
- BNAs
- High Minority/Low-Income Populations
- 456 County Road
- 35 State Highway

**Roadway Segment within Disproportionate BNAs**



**Figure 4.7-1**

measures presented here cannot be completely determined without extensive modeling and/or noise measurements.

#### **4.7.2 Aircraft Noise**

As identified in Section 4.4.4, aircraft noise contours were developed for the Proposed Action and each of the alternatives. Aircraft noise-related impacts are associated with those areas within the noise contours of DNL 65 dB or greater. Current mission support activities, including military aircraft operations, would continue whether or not the Proposed Action or alternatives are implemented; some areas would then continue to be exposed to noise levels of DNL 65 dB under the No-Action Alternative. Therefore, noise impacts associated with the Proposed Action and alternatives would occur where the noise contours for a proposed alternative cover a greater area than the contours for the No-Action Alternative. Impacts to areas in which there are no residences are eliminated from analysis, as are census tracts that do not contain disproportionately high minority or low-income populations.

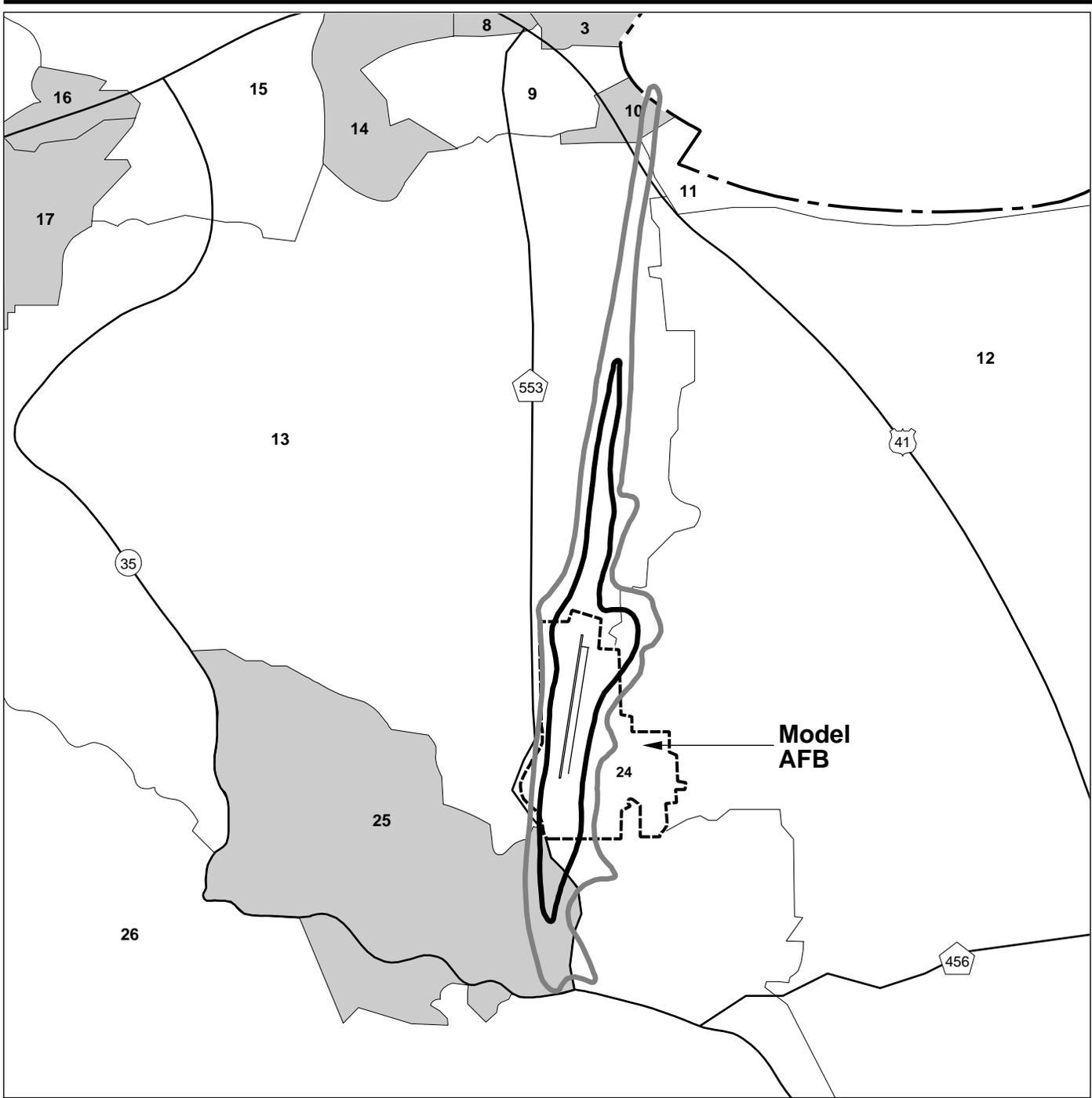
**4.7.2.1 Proposed Action.** Under the Proposed Action, increased aircraft noise would occur within six census tracts surrounding Example AFB ( [Figure 4.7-2](#)). Two of these census tracts (10 and 25) contain disproportionately high minority or low-income populations. However, based on a review of aerial photographs, residential areas are present under the noise contours in only Census Tract 25. Within this census tract, it is estimated that by 2015 an additional 525 residents would be exposed to aircraft noise levels of DNL 65 dB or greater. This number represents an increase of 8 percent over No-Action Alternative projections.

**4.7.2.2 Alternative A.** Under Alternative A ( [Figure 4-7-3](#)), the noise contours would be smaller than those projected for the Proposed Action, and would only affect one disproportionately high minority or low-income census tract (25). Within this census tract, it is estimated that by 2015 an additional 425 residents would be exposed to aircraft noise levels of DNL 65 dB or greater. This number represents an increase of 7 percent over No -Action Alternative projections.

**4.7.2.3 Alternative B.** Under Alternative B, the noise contours would be similar to those under Alternative A, and impacts would be the same.

#### **Mitigation Measures**

The following mitigation measures for potential environmental justice impacts associated with aircraft noise would be similar to those identified for other noise impacts under the Proposed Action (Section 4.4.4.1).



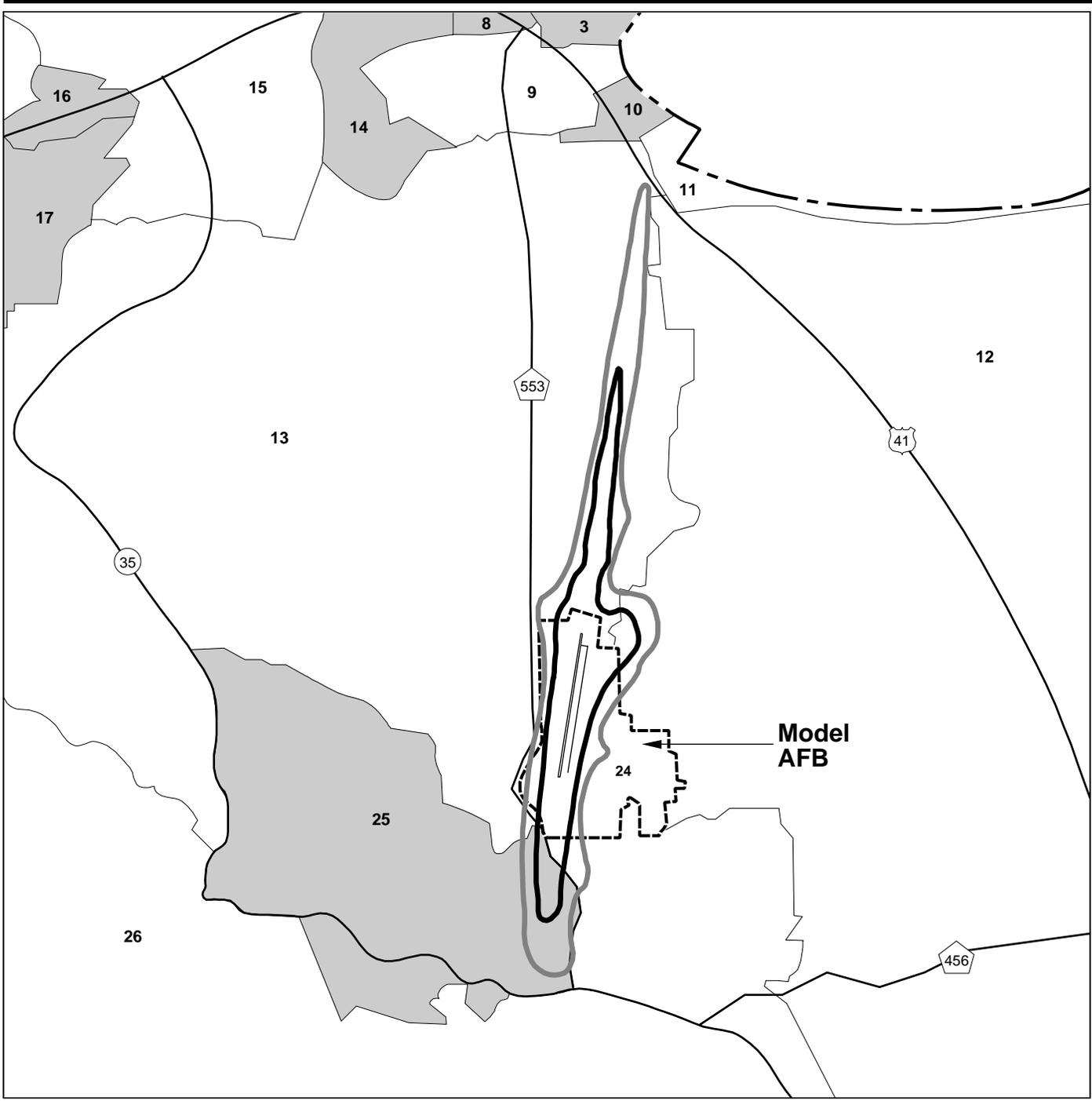
**EXPLANATION**

- Base Boundary
- Census Tract Boundary
- Disproportionate Census Tracts
- . - . - . Example County (Community of Comparison)
- ⬆ 456 County Road
- ⊙ 35 State Highway
- ⊙ 41 U.S. Highway
- Proposed Action 65dB/DNL Contour
- No-Action 65dB DNL Contour
- 26 Census Tract Designation

**Increase in Aircraft Noise (Proposed Action)**



**Figure 4.7-2**



**EXPLANATION**

- Base Boundary
- Census Tract Boundary
- Disproportionate Census Tracts
- - - - - Example County (Community of Comparison)
- 456 County Road
- 35 State Highway
- 41 U.S. Highway
- Alternative A 65dB/DNL Contour
- - - - - No-Action 65dB DNL Contour
- 26 Census Tract Designation



**Increase in Aircraft Noise (Alternative A)**

**Figure 4.7-3**

- **Operational/Management Measures.** Change takeoff, climbout, or landing procedures; change flight tracks; limit or rotate primary runway usage; enforce prescribed flight track use and fan out departure flight tracks; impose curfews; impose noise-related landing fees; develop noise monitoring systems; and establish community relations office.
- **Preventive Measures.** Use the Air Installation Compatible Use Zone (AICUZ) study to discourage residential and other noise-sensitive development within the DNL 65 dB or greater noise contour.

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